UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/867,678	05/31/2001	Eugene I. Chong	19111.0038	7207

23517   7590   10/28/2003

SWIDLER BERLIN SHEREFF FRIEDMAN, LLP
3000 K STREET, NW
BOX IP
WASHINGTON, DC 20007

EXAMINER
PHAM, KHANH B

ART UNIT	PAPER NUMBER
2177	3

DATE MAILED: 10/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No. 09/867,678	**Applicant(s)** CHONG ET AL.	
Office Action Summary	**Examiner** Khanh B. Pham	**Art Unit** 2177	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒   Responsive to communication(s) filed on *31 May 2001* .

2a)☐   This action is **FINAL**.   2b)☒   This action is non-final.

3)☐   Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒   Claim(s) *1-14* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐   Claim(s) _____ is/are allowed.

6)☒   Claim(s) *1-14* is/are rejected.

7)☒   Claim(s) *9-12* is/are objected to.

8)☐   Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒   The specification is objected to by the Examiner.

10)☐   The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐   The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐   The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐   Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐   Certified copies of the priority documents have been received.

      2.☐   Certified copies of the priority documents have been received in Application No. _____ .

      3.☐   Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐   Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐   Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1.   In the reference to related application at page 4, lines 15-20, the attorney docket

number should be replaced with application serial number and its current status.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

2.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

Claims 1-14 are rejected under 35 U.S.C. 101 because the claimed invention is

directed to a nonfunctional descriptive material.

Claims 1-14 are rejected under 35 U.S.C. 101 because the claimed invention is

not tangible embodied.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

6. **Claims 5-6 rejected** under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

Claim 5 recites the limitation "row of the primary B+tree" in line 1. There is

insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   **Claims 1-8 and 13-14** are rejected under 35 U.S.C. 102(a) as being described in

a printed publication by Chong et al. ("B+-Tree Indexes with Hybrid Row Identifiers in

Oracle8i"), hereinafter referred to as "Chong".

As per claim 1, Chong teaches a mapping table for referencing rows of a

primary B+tree, the mapping table comprising: "a row for each row of the primary

B+tree" at page 346, Section 3.3 and Fig. 2.

As per claim 2, Chong teaches the mapping table according to claim 1, wherein

"each row of the mapping table comprises a primary key value from the primary B+tree"

at page 346, Section 3.3 and Fig. 2.

As per claim 3, Chong teaches the mapping table according to claim 1, wherein "the mapping table provides one-to-one mapping between primary keys of the primary B+tree structure and physical row identifiers of the mapping table" at page 346, Section 3.3 and Fig. 2.

As per claim 4, Chong teaches the mapping table according to claim 1, wherein "each row of the mapping table comprises a guess-DBA, database block address of a leaf block of the primary B+tree, where the corresponding primary B+tree row is likely to be found" at page 346, Section 3.3 and Fig. 2.

As per claim 5, Chong teaches a primary B+tree, comprising: "mapping table row identifiers stored in each row of the primary B+tree, the mapping table row identifiers comprising a physical row identifier of a corresponding mapping table row" at page 346, Section 3.3 and Fig. 2.

As per claim 6, Chong teaches the primary B+tree according to claim 5, wherein "the mapping table row identifiers are stored at a fixed offset from a beginning of each row of the primary B+tree" at page 346, Section 3.3 and Fig. 2.

As per claim 7, Chong teaches an auxiliary structure for a primary B+tree, the auxiliary structure comprising: "row identifiers of corresponding mapping table rows, the row identifiers referring to a primary B+tree row" at page 346, Section 3.3 and Fig. 2.

As per claim 8, Chong teaches a method for loading/populating a primary B+tree having an associated mapping table, the method comprising:

- "generating a row of the mapping table for each row of the primary B+tree" at at page 346, Section 3.3 and Fig. 2.; and

- "storing in each row of the mapping table a row identifier for a corresponding row of the primary B+tree, the row identifier comprising a primary key column value for each row of the primary B+tree and a guess-DBA" at page 346, Section 3.3 and Fig. 2.

As per claim 13, Chong teaches a computer program product for performing a process for indexing a primary B+tree, the computer program product comprising:

- "a computer readable medium; and computer program instructions, recorded on the computer readable medium, executable by a processor, for performing the steps of generating a row of a mapping table for each row of the primary B+tree; and storing in each row of the mapping table a row identifier for a corresponding row of the primary B+tree, the identifier comprising a primary key column value and a guess database address for each row of the primary B+tree" at page 346, Section 3.3 and Fig. 2.

As per claim 14, Chong teaches a system for performing a process for indexing a primary B+tree, the system comprising:

- "a processor operable to execute computer program instructions; and a memory operable to store commuter program instructions executable by the processor, for performing the steps of: generating a row of a mapping table for each row of the primary B+tree; storing in each row of the mapping table a row identifier for a corresponding row of the primary B+tree, the identifier comprising a primary key

column value and a guess database address for each row of the primary B+tree"

at page 346, Section 3.3 and Fig. 2.

5.   **Claims 1-8 and 13-14 are rejected** under 35 U.S.C. 102(b) as being anticipated

by Knudsen (US 5,682,535 A), hereinafter referred to as "Knudsen".

As per claim 1, Knudsen teaches a mapping table for referencing rows of a

primary B+tree, the mapping table comprising: "a row for each row of the primary

B+tree" at Col. 68 lines 50-65 and Fig. 27.

As per claim 2, Knudsen teaches the mapping table according to claim 1,

wherein "each row of the mapping table comprises a primary key value from the primary

B+tree" at Col. 68 lines 50-65 and Fig. 27.

As per claim 3, Knudsen teaches the mapping table according to claim 1,

wherein "the mapping table provides one-to-one mapping between primary keys of the

primary B+tree structure and physical row identifiers of the mapping table" at .

As per claim 4, Kundsend teaches the mapping table according to claim 1,

wherein "each row of the mapping table comprises a guess-DBA, database block

address of a leaf block of the primary B+tree, where the corresponding primary B+tree

row is likely to be found" at Col. 68 lines 50-65 and Fig. 27.

As per claim 5, Kundsen teaches a primary B+tree, comprising: "mapping table

row identifiers stored in each row of the primary B+tree, the mapping table row

identifiers comprising a physical row identifier of a corresponding mapping table row" at

Col. 68 lines 50-65 and Fig. 27.

As per claim 6, Knudsen teaches the primary B+tree according to claim 5,

wherein "the mapping table row identifiers are stored at a fixed offset from a beginning

of each row of the primary B+tree" at Col. 71 lines 10-40.

As per claim 7, Knudsen teaches an auxiliary structure for a primary B+tree, the

auxiliary structure comprising: "row identifiers of corresponding mapping table rows, the

row identifiers referring to a primary B+tree row" at Col. 68 lines 50-65 and Fig. 27.

As per claim 8, Knudsen teaches a method for loading/populating a primary

B+tree having an associated mapping table, the method comprising:

- "generating a row of the mapping table for each row of the primary B+tree" at
  Col. 68 lines 50-65 ; and

- "storing in each row of the mapping table a row identifier for a corresponding row
  of the primary B+tree, the row identifier comprising a primary key column value
  for each row of the primary B+tree and a guess-DBA" at Col. 68 lines 50-65 and
  Fig. 27.

As per claim 13, Knudsen teaches a computer program product for performing a

process for indexing a primary B+tree, the computer program product comprising:

- "a computer readable medium; and computer program instructions, recorded on
  the computer readable medium, executable by a processor, for performing the
  steps of generating a row of a mapping table for each row of the primary B+tree;
  and storing in each row of the mapping table a row identifier for a corresponding
  row of the primary B+tree, the identifier comprising a primary key column value

and a guess database address for each row of the primary B+tree" at Col. 68

lines 50-65 and Fig. 27.

As per claim 14, Knudsen teaches a system for performing a process for

indexing a primary B+tree, the system comprising:

- "a processor operable to execute computer program instructions; and a memory

  operable to store commuter program instructions executable by the processor,

  for performing the steps of: generating a row of a mapping table for each row of

  the primary B+tree; storing in each row of the mapping table a row identifier for a

  corresponding row of the primary B+tree, the identifier comprising a primary key

  column value and a guess database address for each row of the primary B+tree"

  at Col. 68 lines 50-65 and Fig. 27.

Allowable Subject Matter

7. Claims 9-12 are objected to but would be allowable if rewritten to overcome the

rejection(s) under 35 U.S.C. 101 set forth in this Office action and to include all of the

limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

Prior art of record does not teach the combination of claimed elements including the

steps of: "computing a length of a mapping table row based upon a length of a primary

key and an overhead of guess-DBA; utilizing the computed length to identify a mapping

table block that can accommodate the row; reserving a slot in the identified mapping

table block, wherein an address of the block and a reserved slot form a mapping table

physical row identifier; utilizing a leaf block address of the primary B+tree row to

construct a row of the mapping table; and inserting the mapping table row in the reserved slot" as recited in independent claim 9. Claims 10-12 are also allowed by virtue of their dependency from claim 9.

Conclusion

8. The prior art made of record, listed on form PTO-892, and not relied upon, if any, is considered pertinent to applicant's disclosure.

If a reference indicated as being mailed on PTO-FORM 892 has not been enclosed in this action, please contact Lisa Craney whose telephone number is **(703) 305-9601** for faster service.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh B. Pham whose telephone number is (703) 308-7299. The examiner can normally be reached on Monday through Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (703) 305-9790. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)746-7240.

Khanh B. Pham
Examiner
Art Unit 2177

KBP
October 14, 2003

JEAN R. HOMERE
PRIMARY EXAMINER